

Clouds Assignment 1:



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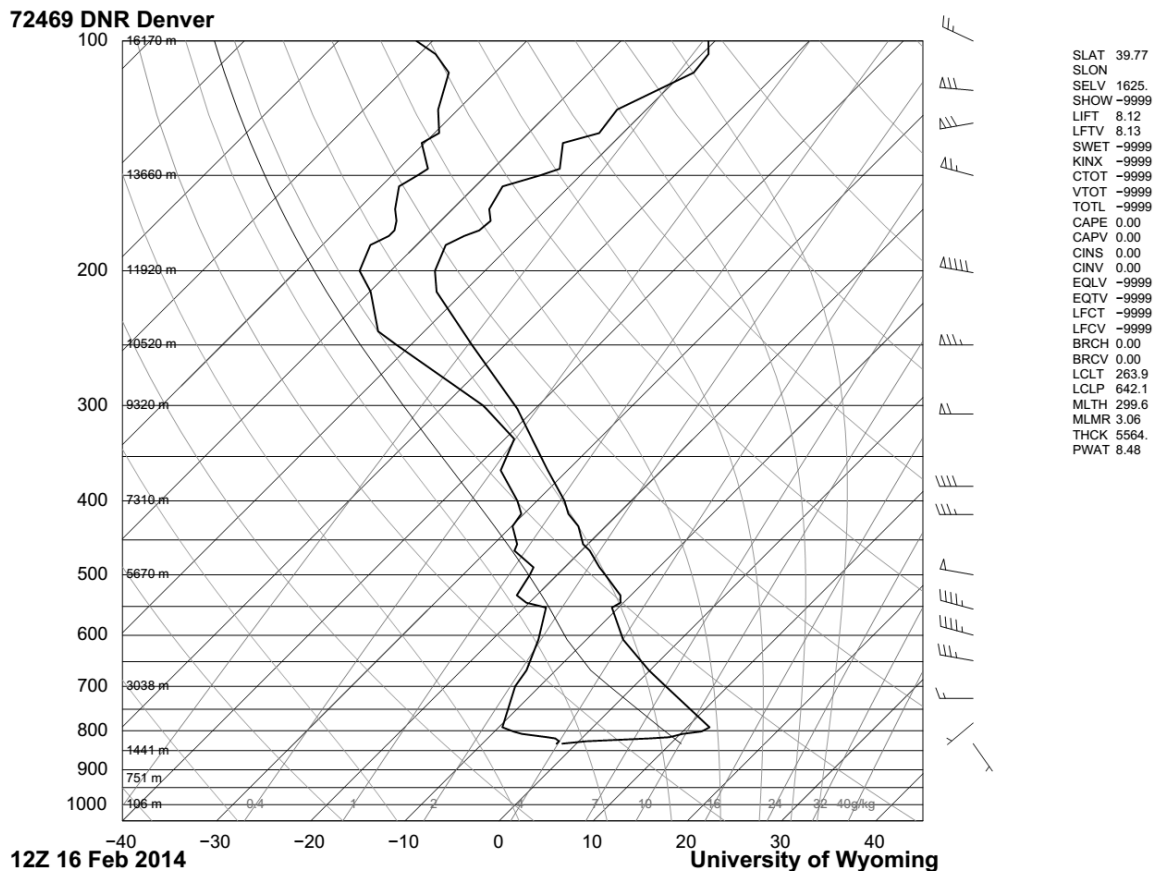
Spring 2014

MCEN 4151: Flow Visualization

This image was taken for a course at the University of Colorado at Boulder titled Flow Visualization. The purpose of this assignment was to photograph clouds. The image taken is taken with the goal of illustrating cloud movement over a mountain peak.

The picture was taken in Rocky Mountain National Park along the ridge on the south side of Dream Lake. The photograph was taken facing South, looking at Long’s Peak. The angle from the horizontal is roughly 0°. It was taken February 16, 2014 at 10:30 AM.

The small ragged clouds in this image are likely pannus. Pannus are classified as “dark shreds of condensation, which form like ghostly apparitions in the saturated air of rainfall” (Prettor-Pinney 241). These clouds are ragged and fall into the stratus fractus category. They are characteristic of a saturated atmosphere so rain would be likely. Although it had not rained/snowed on that day, there may have been a few drops on Long’s Peak. The wind clearly blows from the west to the east in this photo. This fact is made clear by the cloud being blown over the ridge on the left side of the image. It was likely windy in the atmosphere due to the fragmented nature of the clouds. The height of Long’s Peak is 14,259 ft, so the pannus clouds pictured are likely around 15,000 ft. Below is a skew-T plot from Denver on the morning of February 16. The CAPE value is 0 leading to the conclusion of a stable atmosphere. Nothing in the photo would suggest otherwise.



The following camera information was used to create this image. The image was post-processed using Gimp. The image was cropped and switched to grayscale.

Camera: Nikon D40

ISO: 200

F-stop: 8

Exposure time: 1/800 sec

Flash: no flash

Focal Length: 28 mm

Focus: Manual

Original Dimensions: 3008 x 2000

Edited Dimensions: 1953 x 1691

Field of View: Roughly 1 mile

The original image is shown below.



Overall, I think the image produced is pleasant to look at. It portrays a nice view of Long's Peak in the wintertime. The fluid physics are not illustrated as well as I would have liked. I am not sure that the clouds are the star of the show. One method I could have used to achieve more of a focus on the clouds is to crop the entire valley below and just left the ridgeline and clouds. I could have also adjusted more camera settings to capture more texture within the cloud. A short video could have illustrated the movement as well.

Works Cited:

1. Pretor-Pinney, Gavin. *The Cloudspotter's Guide*. London: Sceptre, 2006. Print.